Fig. 1

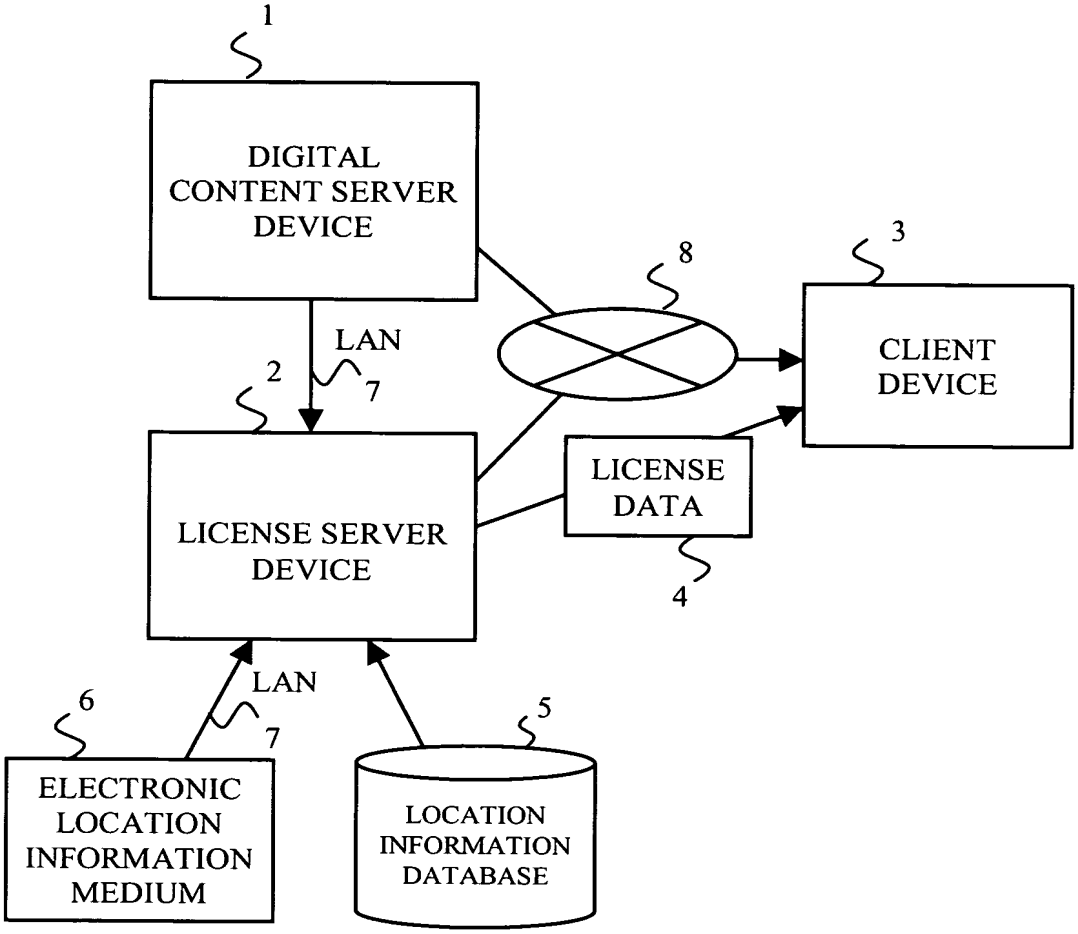

1
DIGITAL CONTENT SERVER DEVICE
8
3
CLIENT DEVICE
LAN
7
2
LICENSE SERVER DEVICE
LICENSE DATA
4
LAN
7
6
ELECTRONIC LOCATION INFORMATION MEDIUM
5
LOCATION INFORMATION DATABASE

Fig. 2

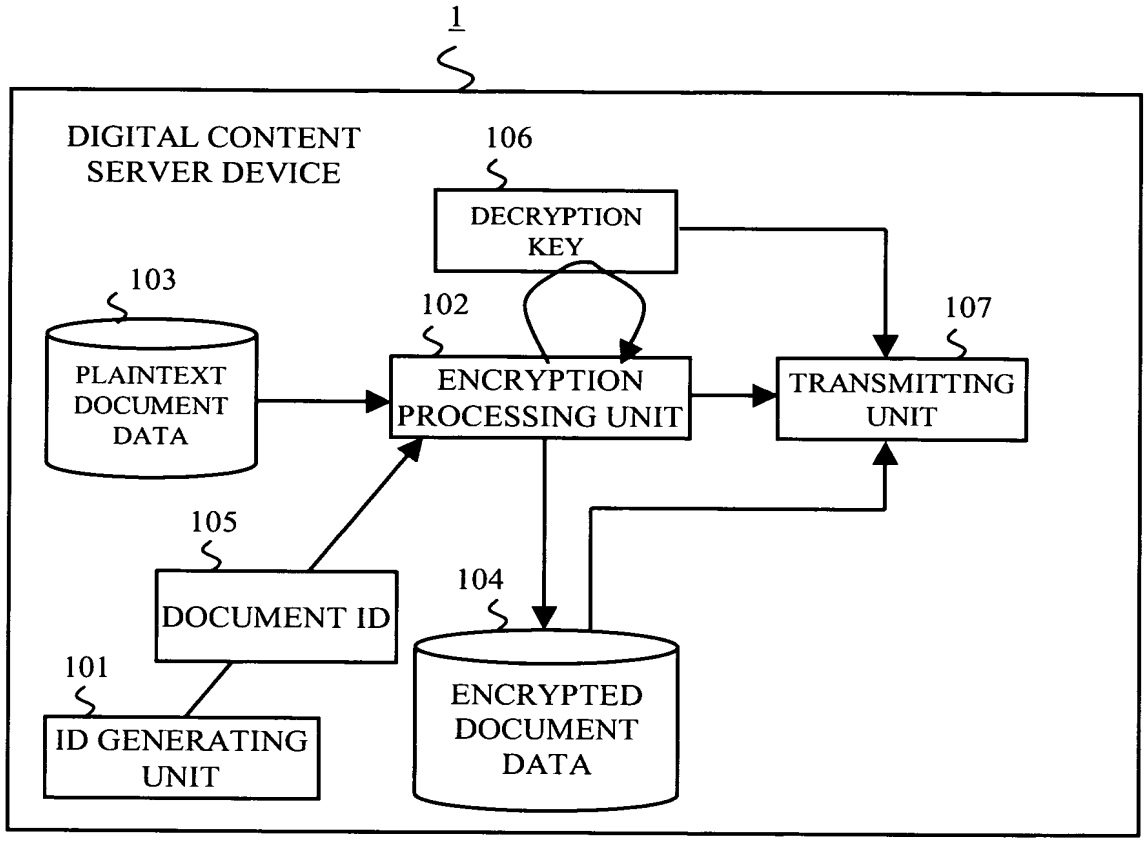

1
DIGITAL CONTENT SERVER DEVICE
106
DECRYPTION KEY
103
PLAINTEXT DOCUMENT DATA
102
ENCRYPTION PROCESSING UNIT
107
TRANSMITTING UNIT
105
DOCUMENT ID
104
ENCRYPTED DOCUMENT DATA
101
ID GENERATING UNIT

Fig. 3

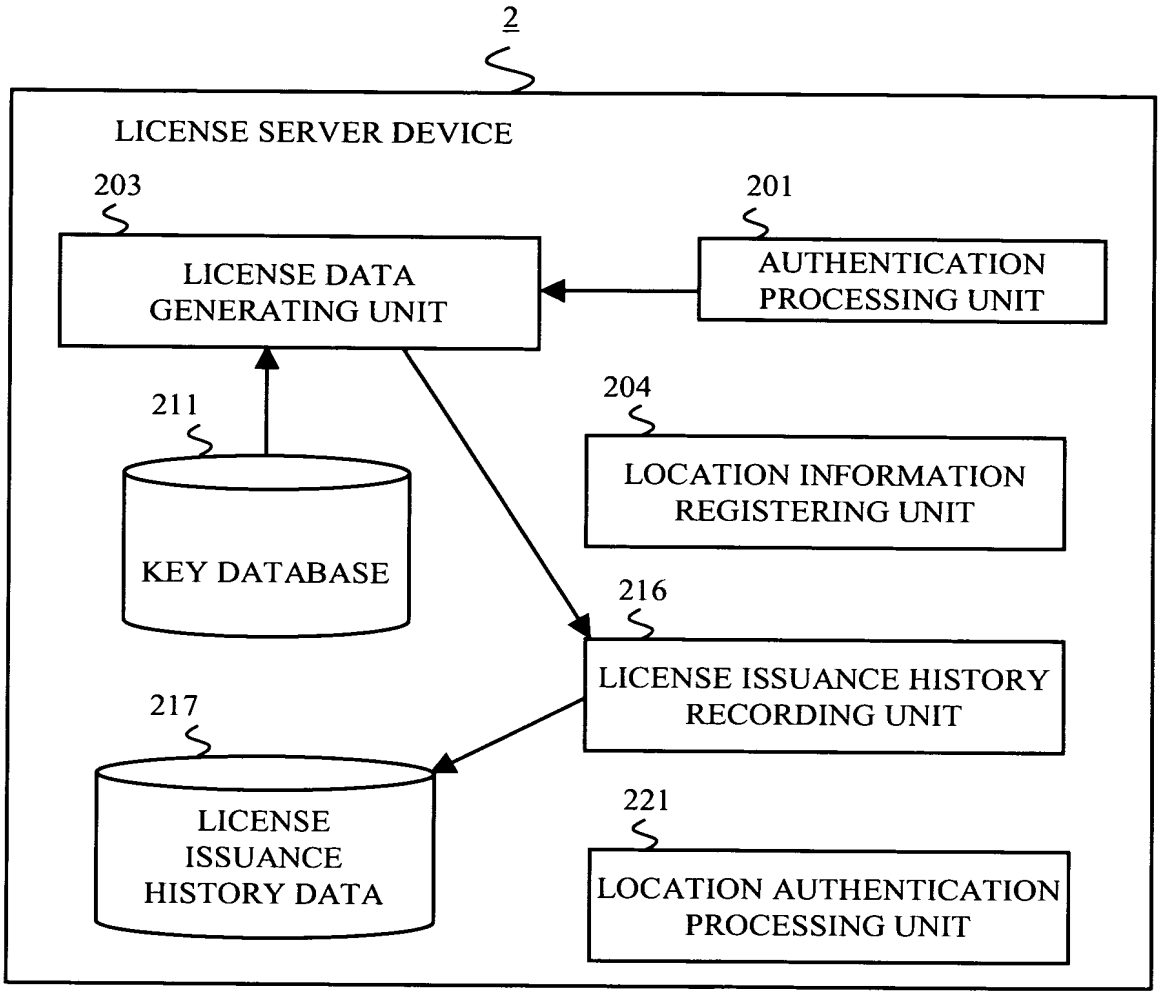

2
LICENSE SERVER DEVICE
203
LICENSE DATA GENERATING UNIT
201
AUTHENTICATION PROCESSING UNIT
211
KEY DATABASE
204
LOCATION INFORMATION REGISTERING UNIT
216
LICENSE ISSUANCE HISTORY RECORDING UNIT
217
LICENSE ISSUANCE HISTORY DATA
221
LOCATION AUTHENTICATION PROCESSING UNIT

Fig. 4

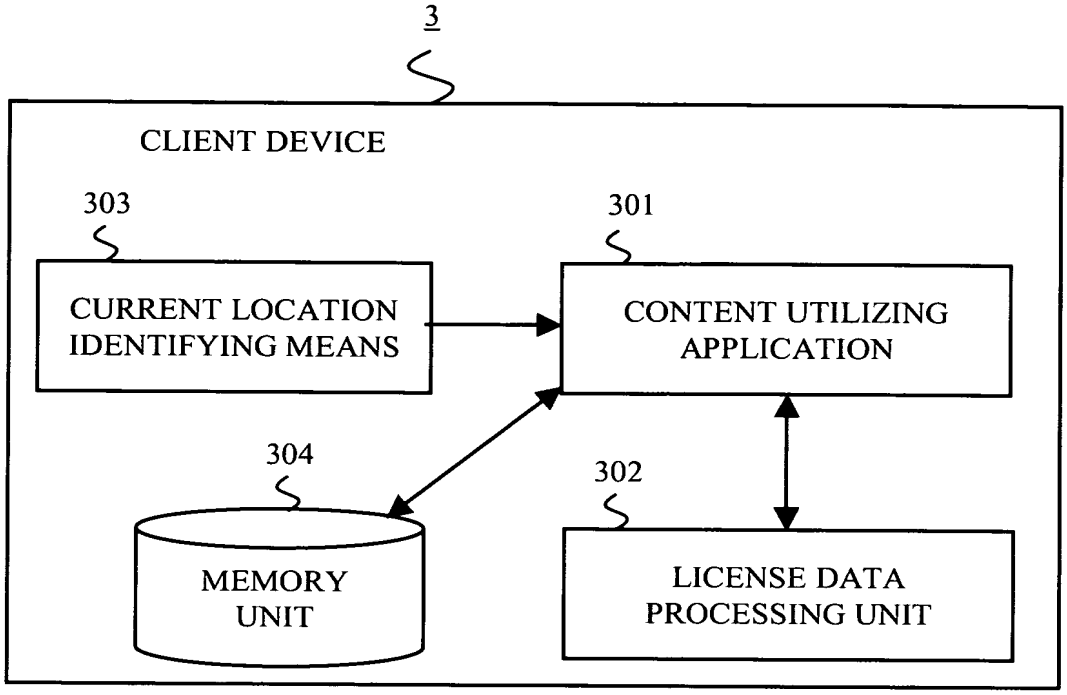

3
CLIENT DEVICE
303
CURRENT LOCATION IDENTIFYING MEANS
301
CONTENT UTILIZING APPLICATION
304
MEMORY UNIT
302
LICENSE DATA PROCESSING UNIT

Fig. 5

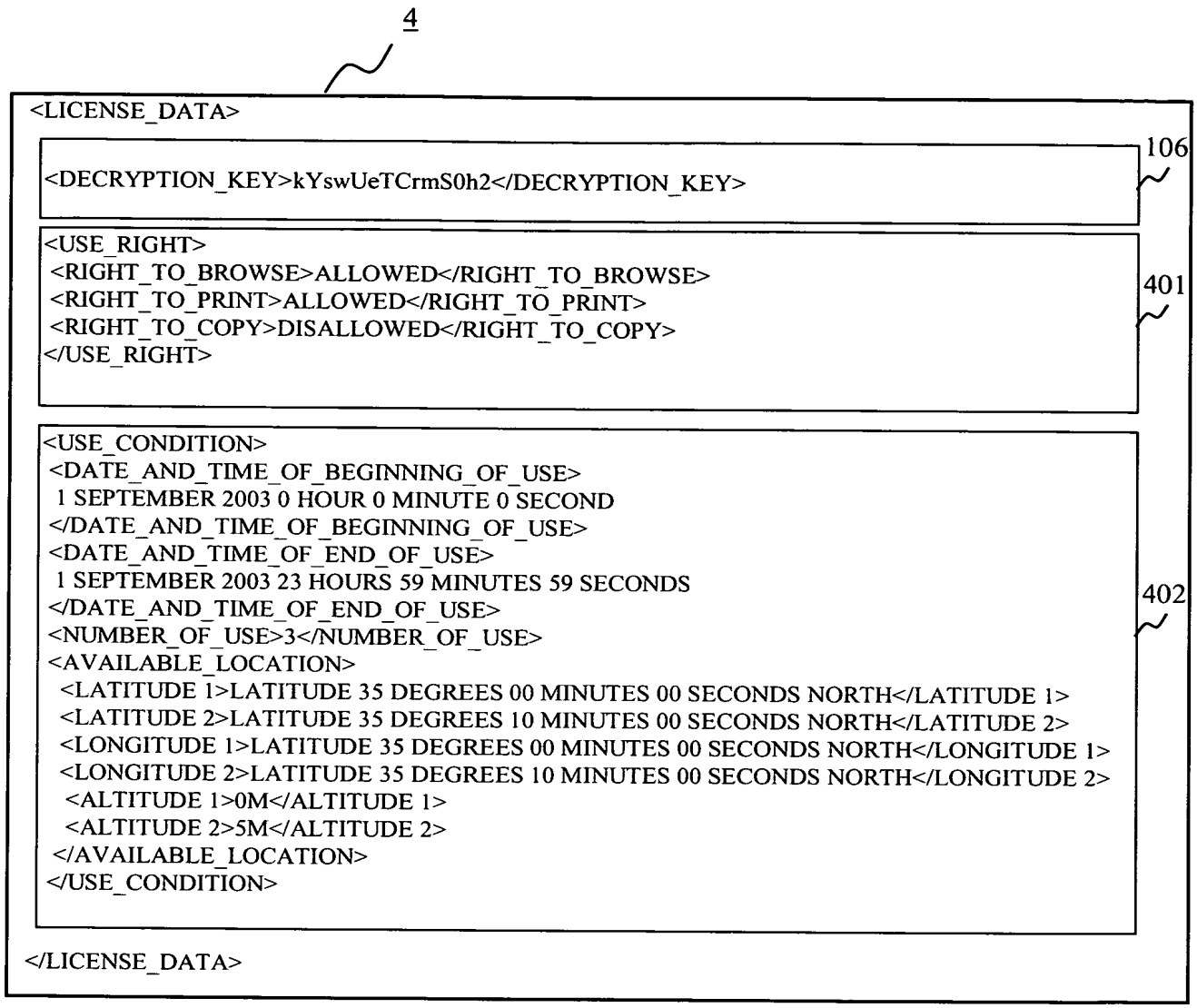

4
<LICENSE_DATA>
<DECRYPTION_KEY>kYswUeTCrmS0h2</DECRYPTION_KEY>
106
<USE_RIGHT>
<RIGHT_TO_BROWSE>ALLOWED</RIGHT_TO_BROWSE>
<RIGHT_TO_PRINT>ALLOWED</RIGHT_TO_PRINT>
<RIGHT_TO_COPY>DISALLOWED</RIGHT_TO_COPY>
</USE_RIGHT>
401
<USE_CONDITION>
<DATE_AND_TIME_OF_BEGINNING_OF_USE>
1 SEPTEMBER 2003 0 HOUR 0 MINUTE 0 SECOND
</DATE_AND_TIME_OF_BEGINNING_OF_USE>
<DATE_AND_TIME_OF_END_OF_USE>
1 SEPTEMBER 2003 23 HOURS 59 MINUTES 59 SECONDS
</DATE_AND_TIME_OF_END_OF_USE>
<NUMBER_OF_USE>3</NUMBER_OF_USE>
<AVAILABLE_LOCATION>
<LATITUDE 1>LATITUDE 35 DEGREES 00 MINUTES 00 SECONDS NORTH</LATITUDE 1>
<LATITUDE 2>LATITUDE 35 DEGREES 10 MINUTES 00 SECONDS NORTH</LATITUDE 2>
<LONGITUDE 1>LATITUDE 35 DEGREES 00 MINUTES 00 SECONDS NORTH</LONGITUDE 1>
<LONGITUDE 2>LATITUDE 35 DEGREES 10 MINUTES 00 SECONDS NORTH</LONGITUDE 2>
<ALTITUDE 1>0M</ALTITUDE 1>
<ALTITUDE 2>5M</ALTITUDE 2>
</AVAILABLE_LOCATION>
</USE_CONDITION>
402
</LICENSE_DATA>

Fig. 6

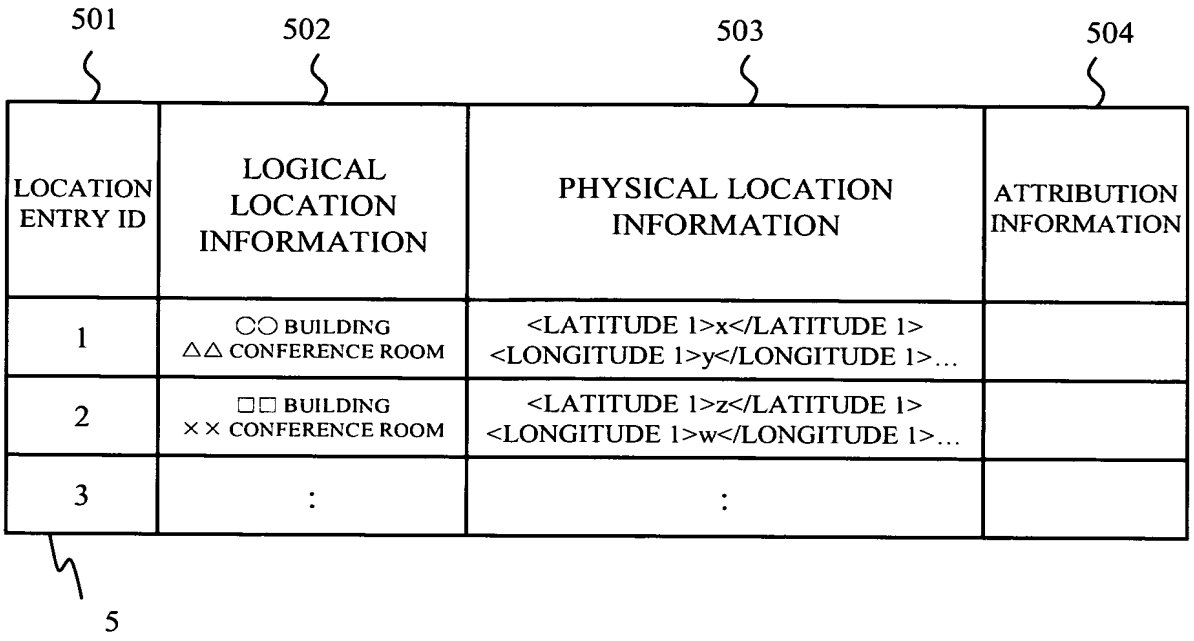

501
502
503
504
LOCATION ENTRY ID
LOGICAL LOCATION INFORMATION
PHYSICAL LOCATION INFORMATION
ATTRIBUTION INFORMATION
1
○○ BUILDING △△ CONFERENCE ROOM
<LATITUDE 1>x</LATITUDE 1> <LONGITUDE 1>y</LONGITUDE 1>...
2
□□ BUILDING ×× CONFERENCE ROOM
<LATITUDE 1>z</LATITUDE 1> <LONGITUDE 1>w</LONGITUDE 1>...
3
:
:
5

Fig. 7

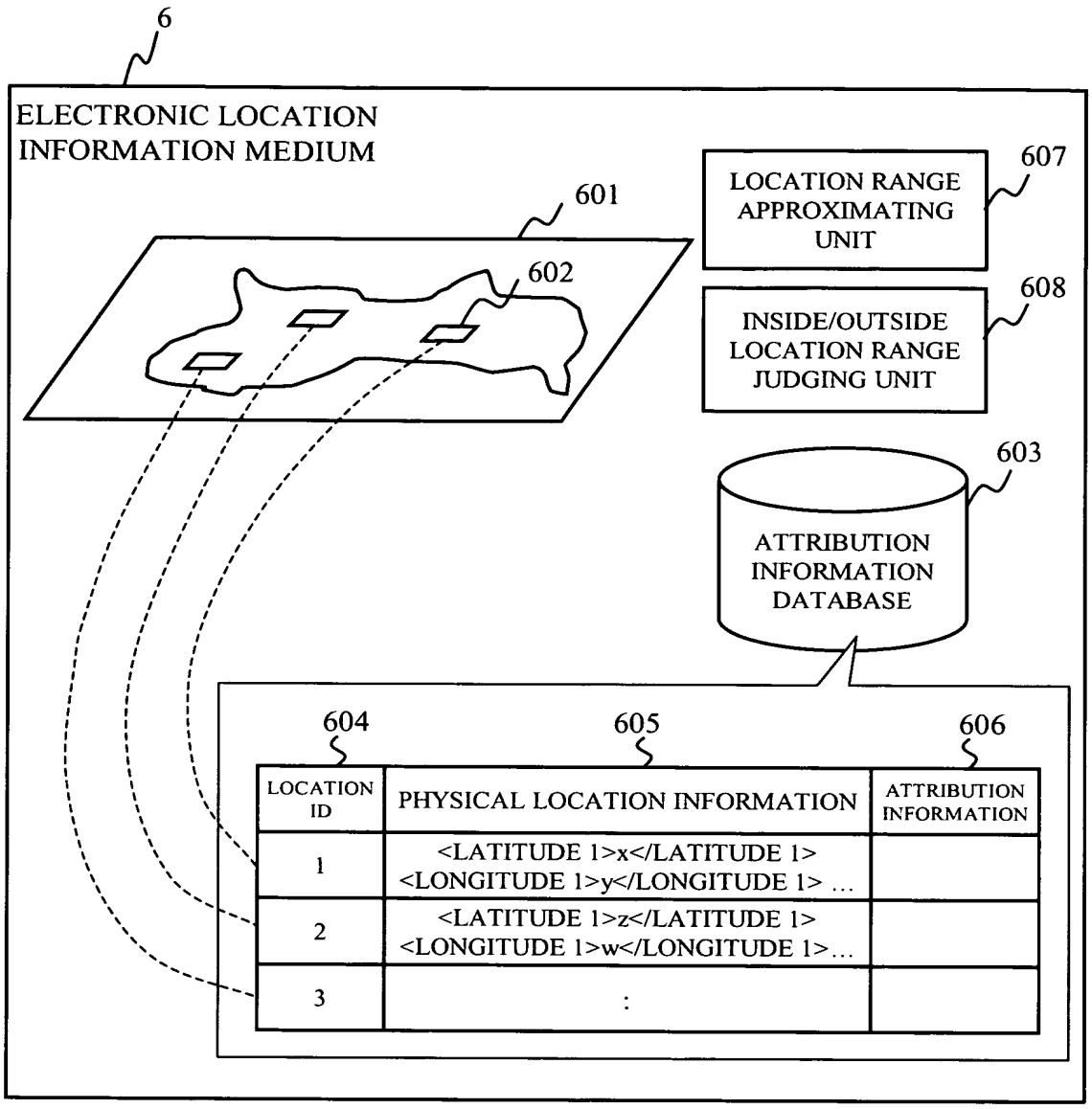

6
ELECTRONIC LOCATION INFORMATION MEDIUM
601
602
LOCATION RANGE APPROXIMATING UNIT
607
INSIDE/OUTSIDE LOCATION RANGE JUDGING UNIT
608
603
ATTRIBUTION INFORMATION DATABASE
604
605
606
LOCATION ID
PHYSICAL LOCATION INFORMATION
ATTRIBUTION INFORMATION
1
<LATITUDE 1>x</LATITUDE 1> <LONGITUDE 1>y</LONGITUDE 1> ...
2
<LATITUDE 1>z</LATITUDE 1> <LONGITUDE 1>w</LONGITUDE 1>...
3
:

Fig. 8

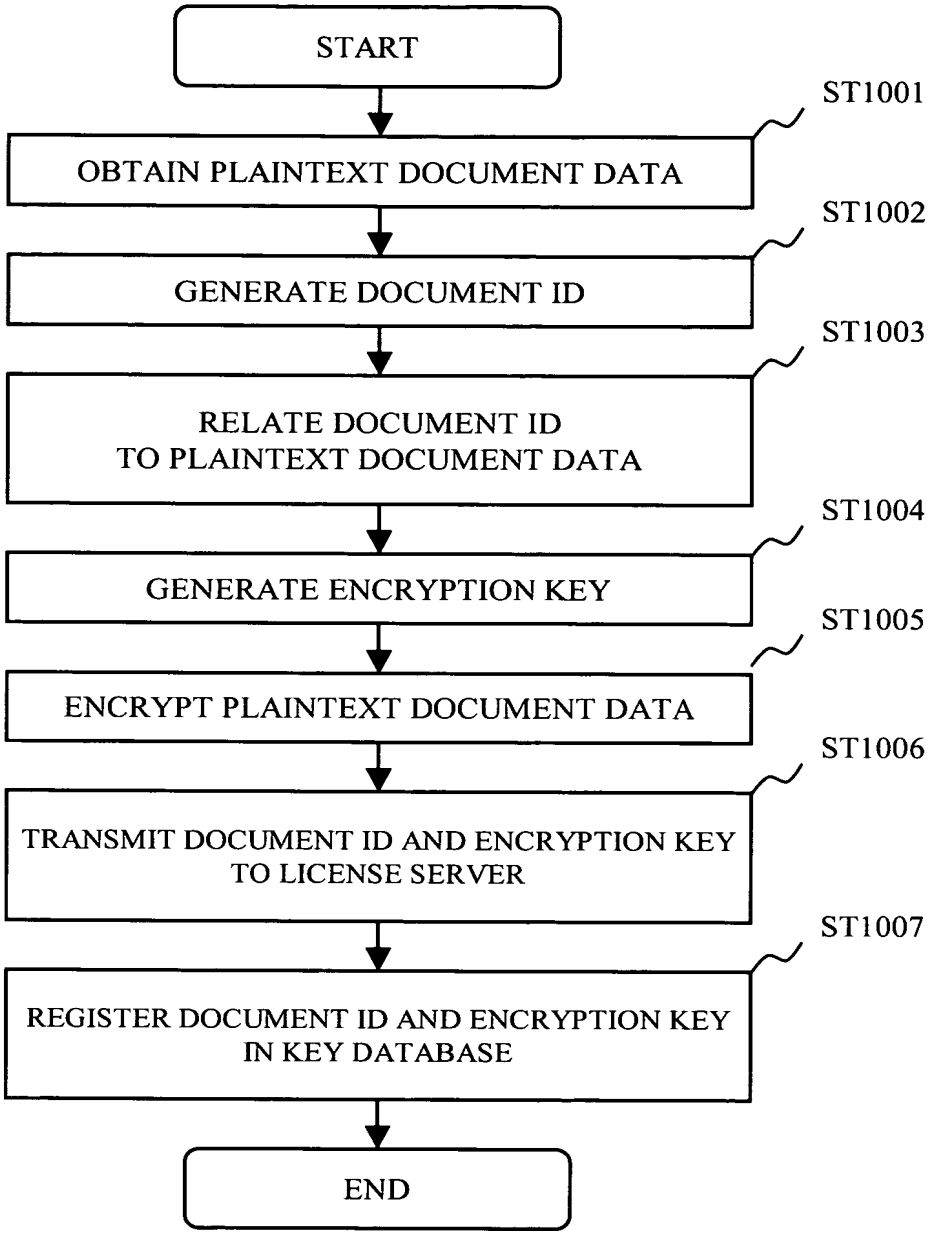

START
ST1001
OBTAIN PLAINTEXT DOCUMENT DATA
ST1002
GENERATE DOCUMENT ID
ST1003
RELATE DOCUMENT ID
TO PLAINTEXT DOCUMENT DATA
ST1004
GENERATE ENCRYPTION KEY
ST1005
ENCRYPT PLAINTEXT DOCUMENT DATA
ST1006
TRANSMIT DOCUMENT ID AND ENCRYPTION KEY
TO LICENSE SERVER
ST1007
REGISTER DOCUMENT ID AND ENCRYPTION KEY
IN KEY DATABASE
END

Fig. 9

105 106

DOCUMENT ID	DECRYPTION KEY
1000-222-123450000	kYswUeTCrmS0h2
1000-222-123450001	GJrA15SS7TYZzSf
1000-222-123450002	aS0xR9lZdUEF0Th
:	:

Fig. 10

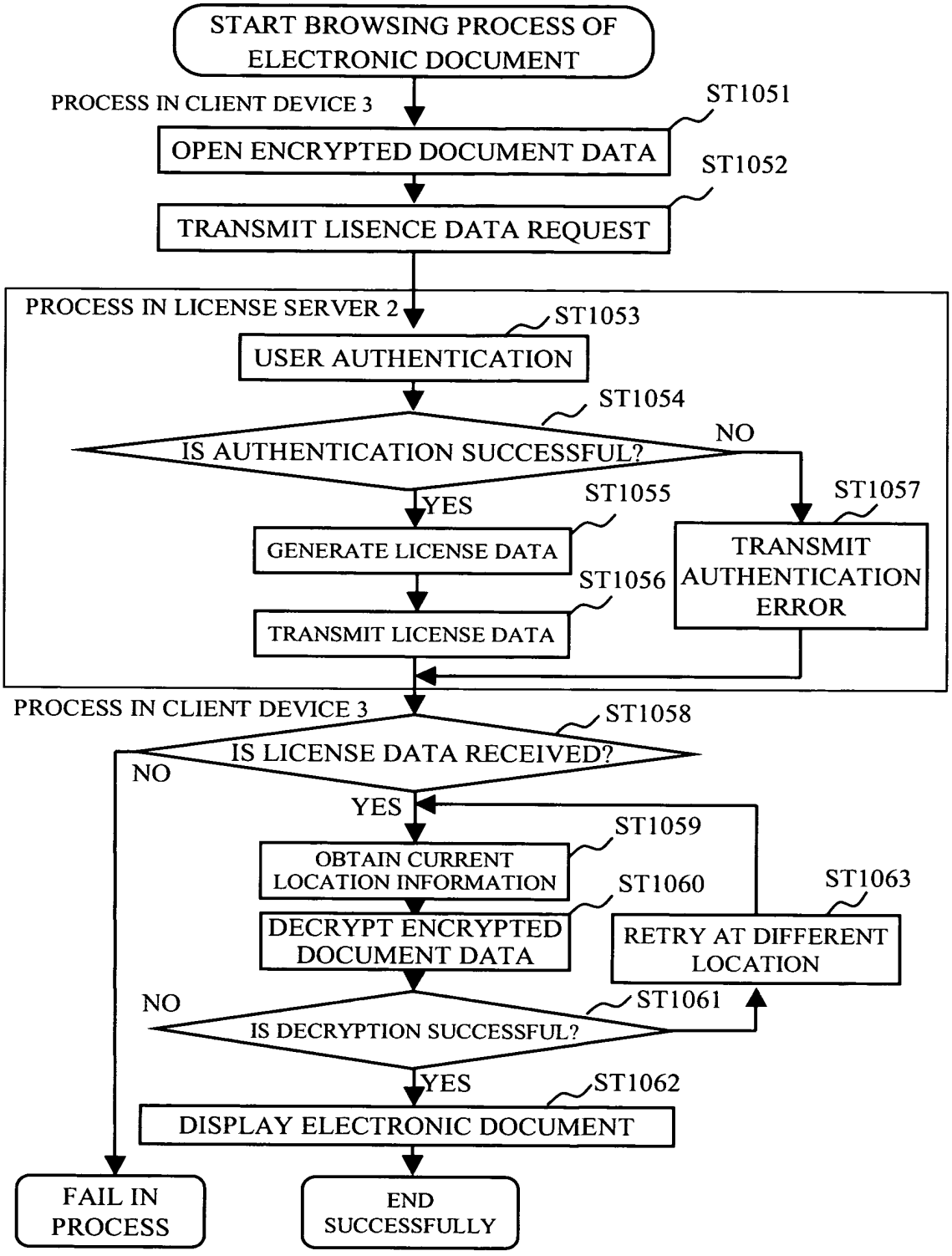

START BROWSING PROCESS OF ELECTRONIC DOCUMENT
PROCESS IN CLIENT DEVICE 3
ST1051
OPEN ENCRYPTED DOCUMENT DATA
ST1052
TRANSMIT LISENCE DATA REQUEST
PROCESS IN LICENSE SERVER 2
ST1053
USER AUTHENTICATION
ST1054
IS AUTHENTICATION SUCCESSFUL?
NO
YES
ST1055
GENERATE LICENSE DATA
ST1056
TRANSMIT LICENSE DATA
ST1057
TRANSMIT AUTHENTICATION ERROR
PROCESS IN CLIENT DEVICE 3
ST1058
IS LICENSE DATA RECEIVED?
NO
YES
ST1059
OBTAIN CURRENT LOCATION INFORMATION
ST1060
DECRYPT ENCRYPTED DOCUMENT DATA
ST1063
RETRY AT DIFFERENT LOCATION
NO
ST1061
IS DECRYPTION SUCCESSFUL?
YES
ST1062
DISPLAY ELECTRONIC DOCUMENT
FAIL IN PROCESS
END SUCCESSFULLY

Fig. 11

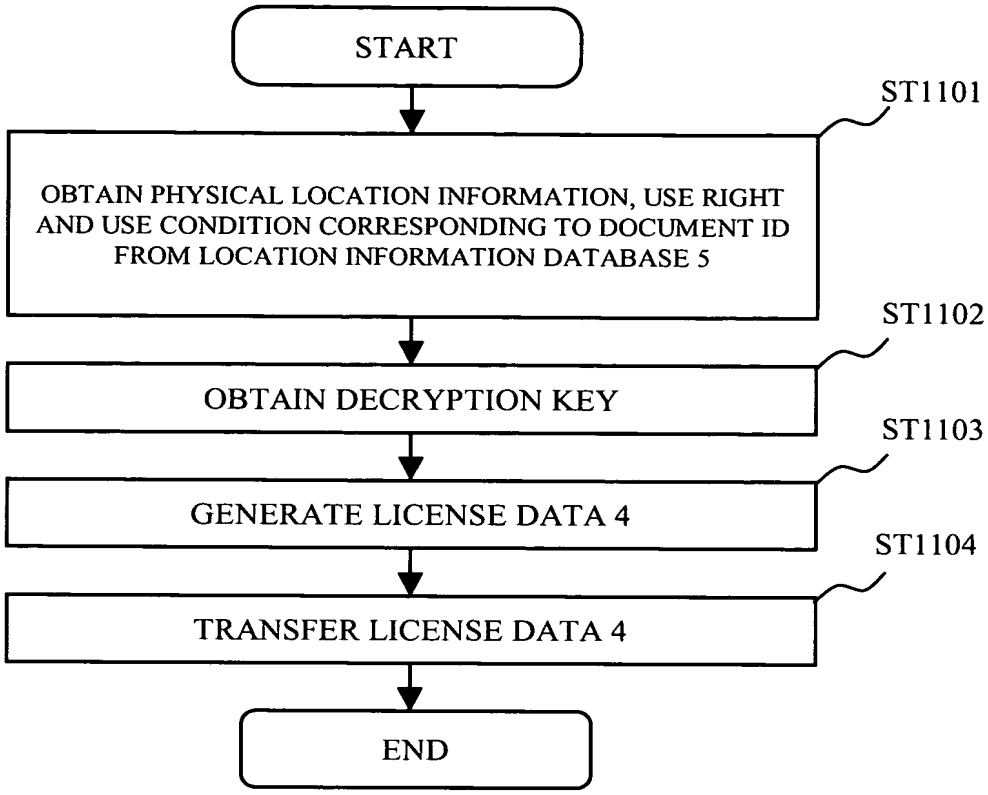


Fig.12

DOCUMENT ID	USE RIGHT			USE CONDITION		
	BROWSE	PRINT	COPY	TIME WINDOW	BROWSABLE NUMBER OF TIMES	BROWSABLE LOCATION
123450000	ALLOWED	ALLOWED	ALLOWED	ONE DAY	ONE TIME	1
123450001	ALLOWED	DISALLOWED	ALLOWED	ONE WEEK	THREE TIMES	1, 2
123450002	ALLOWED	ALLOWED	DISALLOWED	ONE MONTH	INFINITE	3

Fig. 13

606

LOCATION ID	...	CONDITION OF EACH USER		USE RIGHT		USE CONDITION	AVAILABLE LOCATION IDENTIFYING METHOD		
		ADMINIS-TRATOR	THE GENERAL	PRINT	COPY	TIME WINDOW	GPS	MOBILE PHONE	...
1	...	ALLOWED	ALLOWED	ALLOWED	ALLOWED	ONE DAY	ALLOWED	ALLOWED	...
2	...	ALLOWED	DISALLOWED	DIS-ALLOWED	ALLOWED	ONE WEEK	ALLOWED	DISALLOWED	...
3	...	ALLOWED	DISALLOWED	ALLOWED	DISALLOWED	ONE MONTH	DISALLOWED	ALLOWED	...

Fig.14

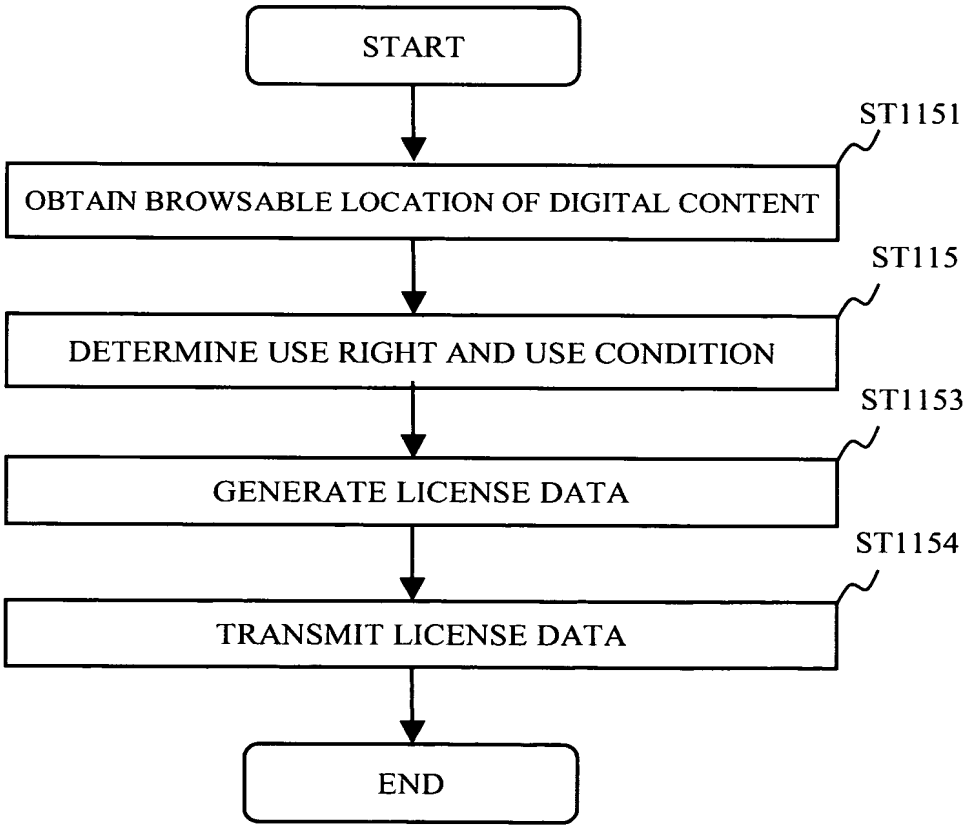


Fig. 15

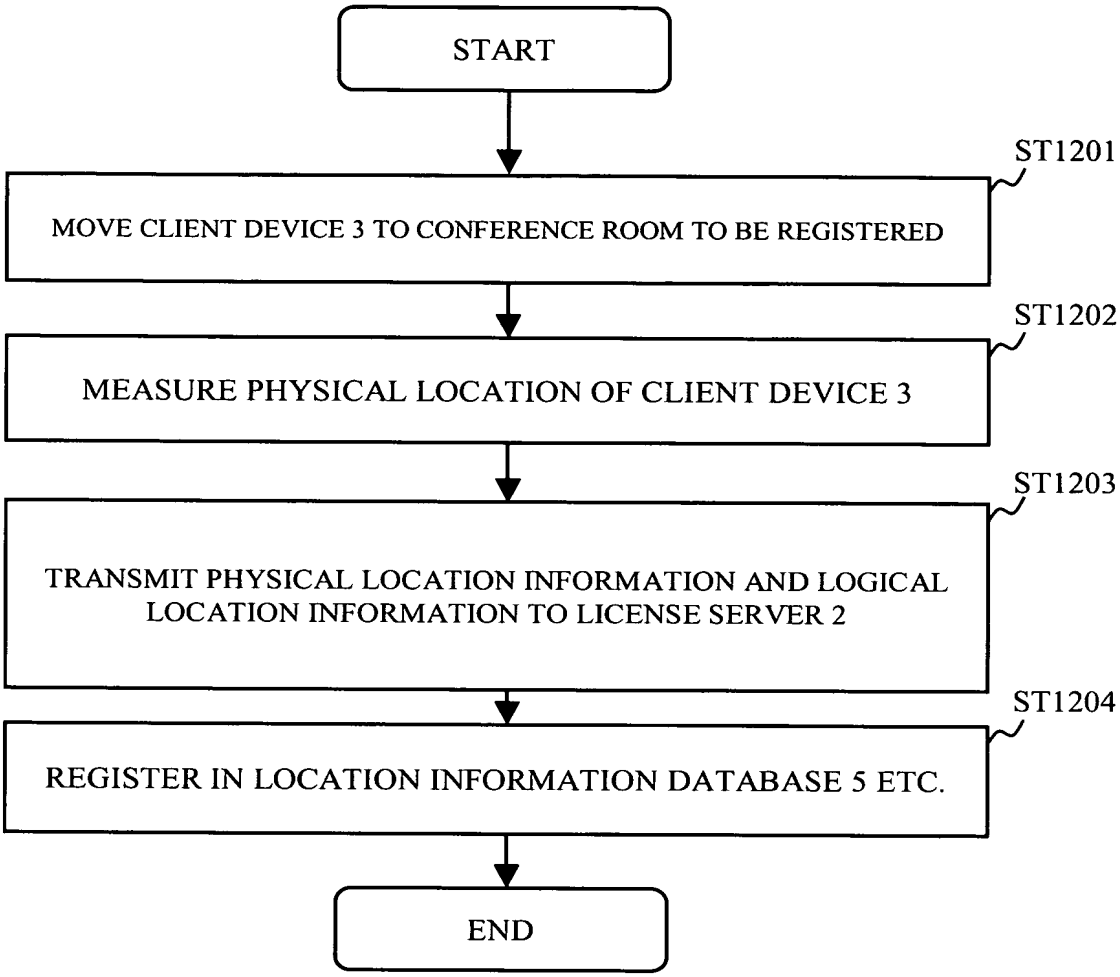

START
ST1201
MOVE CLIENT DEVICE 3 TO CONFERENCE ROOM TO BE REGISTERED
ST1202
MEASURE PHYSICAL LOCATION OF CLIENT DEVICE 3
ST1203
TRANSMIT PHYSICAL LOCATION INFORMATION AND LOGICAL LOCATION INFORMATION TO LICENSE SERVER 2
ST1204
REGISTER IN LOCATION INFORMATION DATABASE 5 ETC.
END

Fig. 16

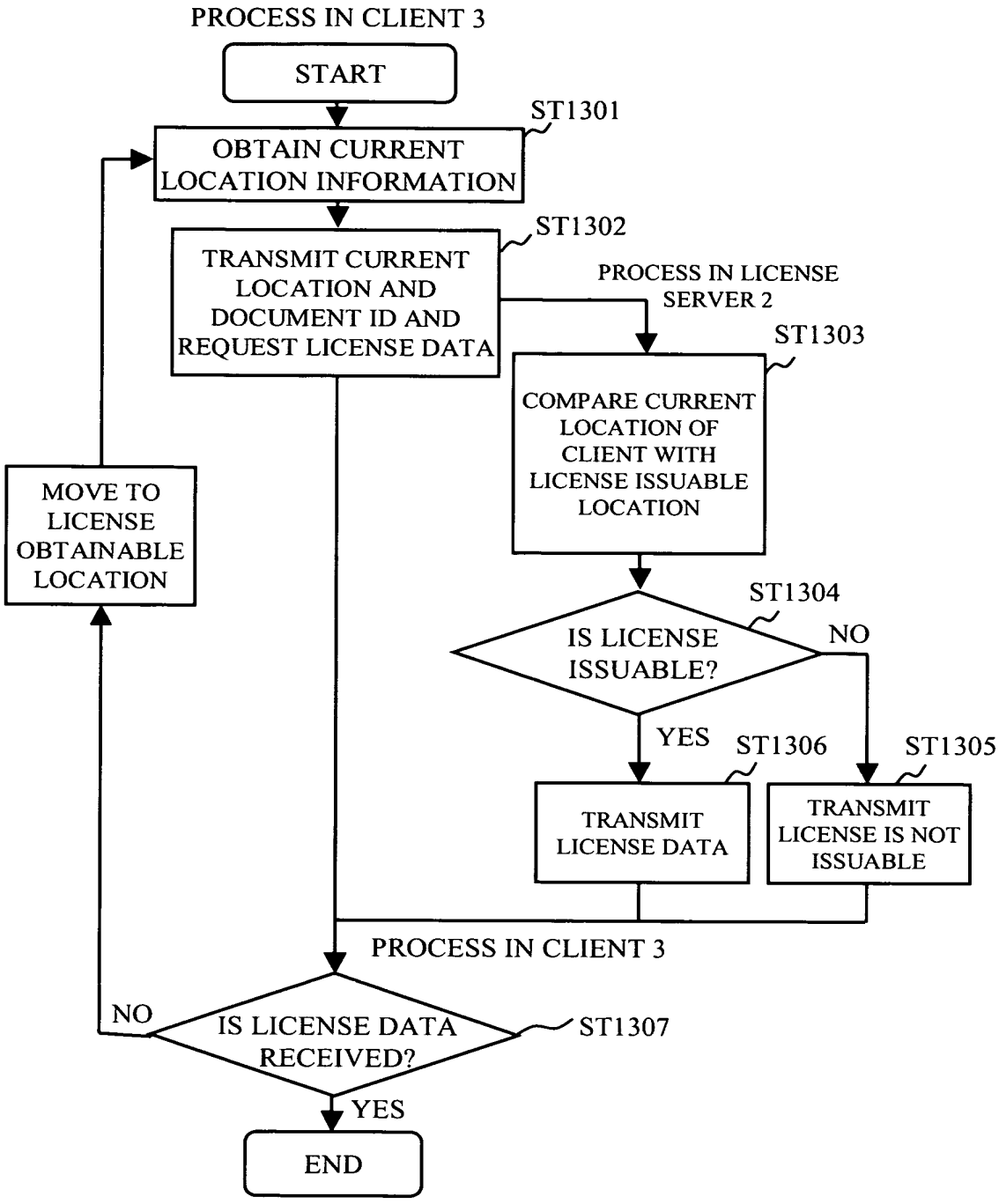

PROCESS IN CLIENT 3
START
ST1301
OBTAIN CURRENT LOCATION INFORMATION
ST1302
TRANSMIT CURRENT LOCATION AND DOCUMENT ID AND REQUEST LICENSE DATA
PROCESS IN LICENSE SERVER 2
ST1303
COMPARE CURRENT LOCATION OF CLIENT WITH LICENSE ISSUABLE LOCATION
ST1304
IS LICENSE ISSUABLE?
NO
YES
ST1306
ST1305
TRANSMIT LICENSE DATA
TRANSMIT LICENSE IS NOT ISSUABLE
MOVE TO LICENSE OBTAINABLE LOCATION
PROCESS IN CLIENT 3
NO
IS LICENSE DATA RECEIVED?
ST1307
YES
END

Fig. 17

DOCUMENT ID	USE RIGHT			USE CONDITION			LICENSE ISSUABLE LOCATION
	BROWSE	PRINT	COPY	TIME WINDOW	BROWSABLE NUMBER OF TIMES	BROWSABLE LOCATION	
123450000	ALLOWED	ALLOWED	ALLOWED	ONE DAY	ONE TIME	1	INSIDE COMPANY BUILDING
123450001	ALLOWED	DISALLOWED	ALLOWED	ONE WEEK	THREE TIMES	1, 2	INSIDE COMPANY BUILDING
123450002	ALLOWED	ALLOWED	DISALLOWED	ONE MONTH	INFINITE	3	NO RESTRICTION

Fig.18

DATE AND TIME	EMPLOYEE NUMBER	IP ADDRESS	DOCUMENT ID	CLIENT LOCATION	SUCCESSFUL/ UNSUCCESSFUL
2003/09/08 10:00	1001	192.168.1.100	123450000	NORTH LATITUDE x1 EAST LONGITUDE y1 ALTITUDE z1	SUCCESSFUL
2003/09/08 11:00	1021	192.168.1.101	123450001	NORTH LATITUDE x2 EAST LONGITUDE y2 ALTITUDE z2	SUCCESSFUL
2003/09/08 12:00	1035	192.168.1.102	123450002	NORTH LATITUDE x3 EAST LONGITUDE y3 ALTITUDE z3	UNSUCCESSFUL
:	:	:	:	:	:

Fig. 19

USE CONDITION

402

```
<USE_CONDITION>
   :
<AVAILABLE_LOCATION>
 <LATITUDE 1>LATITUDE 35 DEGREES 00 MINUTES 00 SECONDS NORTH</LATITUDE 1>
 <LATITUDE 2>LATITUDE 35 DEGREES 10 MINUTES 00 SECONDS NORTH</LATITUDE 2>
 <LONGITUDE 1>LATITUDE 35 DEGREES 00 MINUTES 00 SECONDS NORTH</LONGITUDE 1>
 <LONGITUDE 2>LATITUDE 35 DEGREES 10 MINUTES 00 SECONDS NORTH</LONGITUDE 2>
<ALTITUDE 1>0M</ALTITUDE 1>
<ALTITUDE 2>5M</ALTITUDE 2>
</AVAILABLE_LOCATION>
```

403

```
<CURRENT_LOCATION_IDENTIFYING_SYSTEM COMBINATION="AND">
 <SYSTEM 1>GPS</SYSTEM 1>
 <SYSTEM 2>MOBILE PHONE</SYSTEM 2>
</CURRENT_LOCATION_IDENTIFYING_SYSTEM>

</USE_CONDITION>
```

Fig. 20

USE CONDITION 402

```
<USE_CONDITION>
   :
<AVAILABLE_LOCATION>
 <LATITUDE 1>LATITUDE 35 DEGREES 00 MINUTES 00 SECONDS NORTH</LATITUDE 1>
 <LATITUDE 2>LATITUDE 35 DEGREES 10 MINUTES 00 SECONDS NORTH</LATITUDE 2>
 <LONGITUDE 1>LATITUDE 35 DEGREES 00 MINUTES 00 SECONDS NORTH</LONGITUDE 1>
 <LONGITUDE 2>LATITUDE 35 DEGREES 10 MINUTES 00 SECONDS NORTH</LONGITUDE 2>
 <ALTITUDE 1>0M</ALTITUDE 1>
 <ALTITUDE 2>5M</ALTITUDE 2>
</AVAILABLE_LOCATION>
```

403

```
<CURRENT_LOCATION_IDENTIFYING_SYSTEM COMBINATION="OR">
 <SYSTEM 1>GPS</SYSTEM 1>
 <SYSTEM 2>PHS</SYSTEM 2>
</CURRENT_LOCATION_IDENTIFYING_SYSTEM>
```

```
</USE_CONDITION>
```

Fig. 21

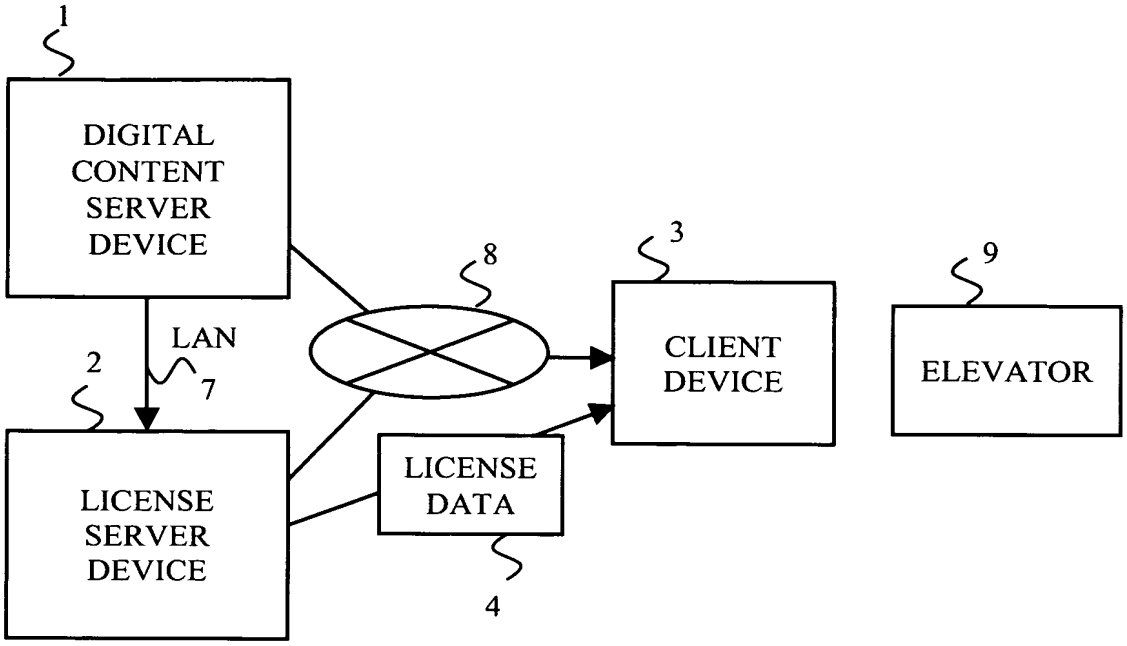

1
DIGITAL CONTENT SERVER DEVICE
LAN
7
2
LICENSE SERVER DEVICE
8
3
CLIENT DEVICE
9
ELEVATOR
LICENSE DATA
4

Fig.22

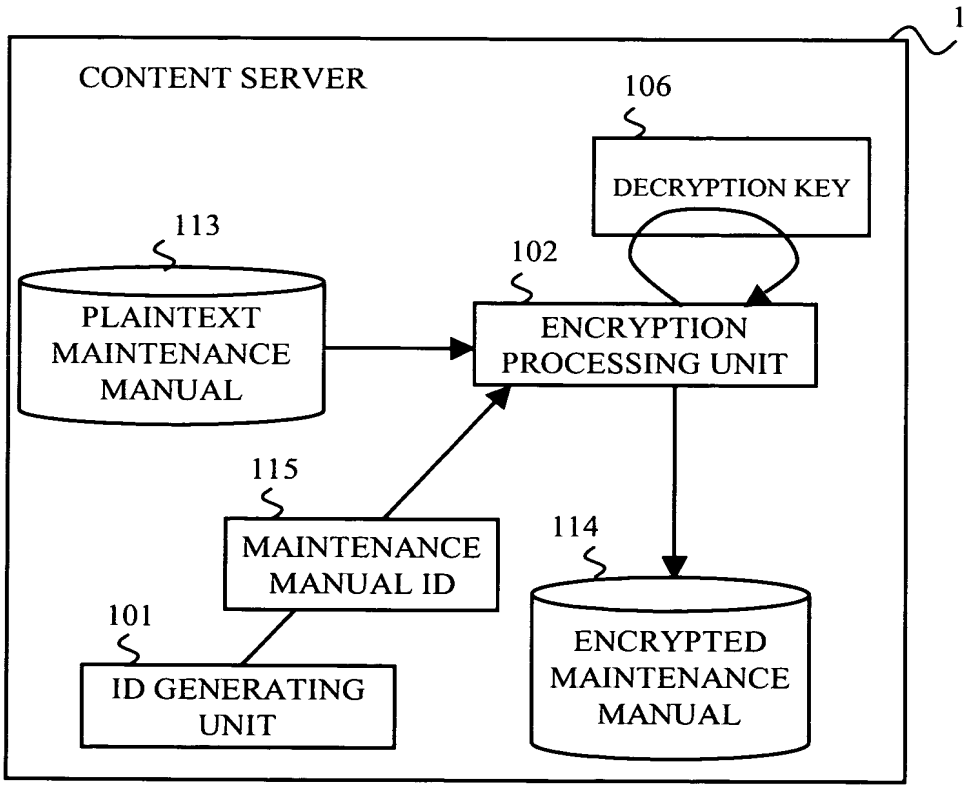

1
CONTENT SERVER
106
DECRYPTION KEY
113
PLAINTEXT MAINTENANCE MANUAL
102
ENCRYPTION PROCESSING UNIT
115
MAINTENANCE MANUAL ID
114
ENCRYPTED MAINTENANCE MANUAL
101
ID GENERATING UNIT

Fig. 23

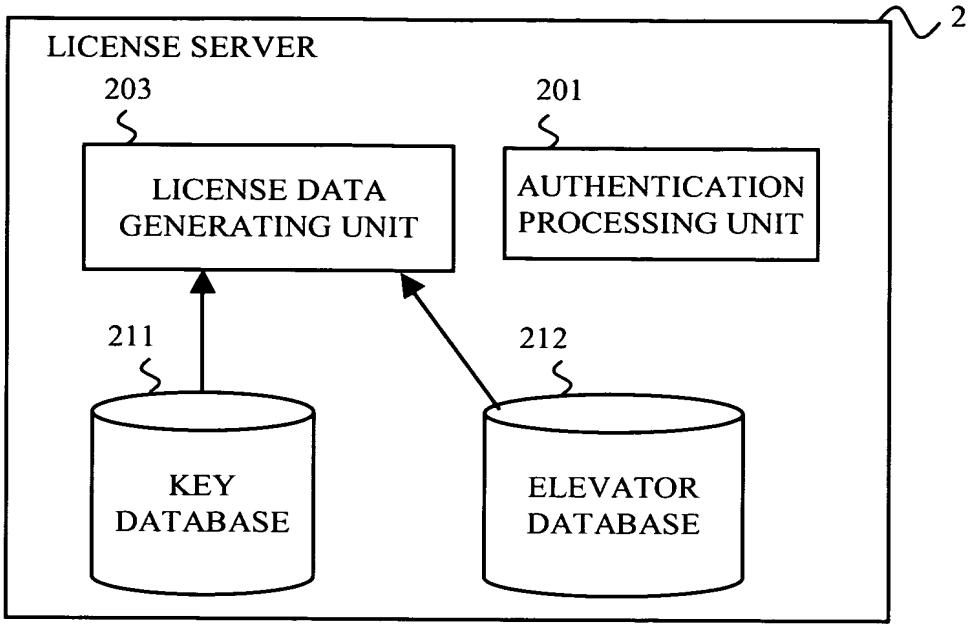

LICENSE SERVER
2
203
201
LICENSE DATA GENERATING UNIT
AUTHENTICATION PROCESSING UNIT
211
212
KEY DATABASE
ELEVATOR DATABASE

Fig.24

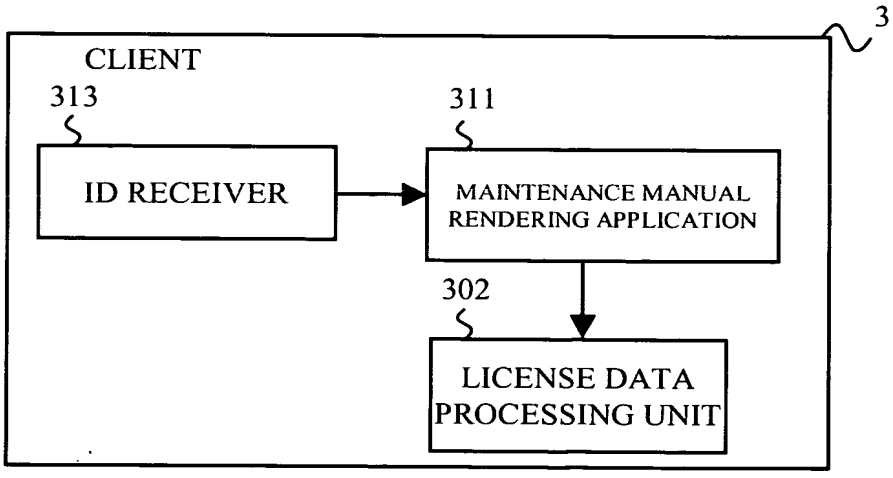

CLIENT
3
313
311
ID RECEIVER
MAINTENANCE MANUAL RENDERING APPLICATION
302
LICENSE DATA PROCESSING UNIT

Fig. 25

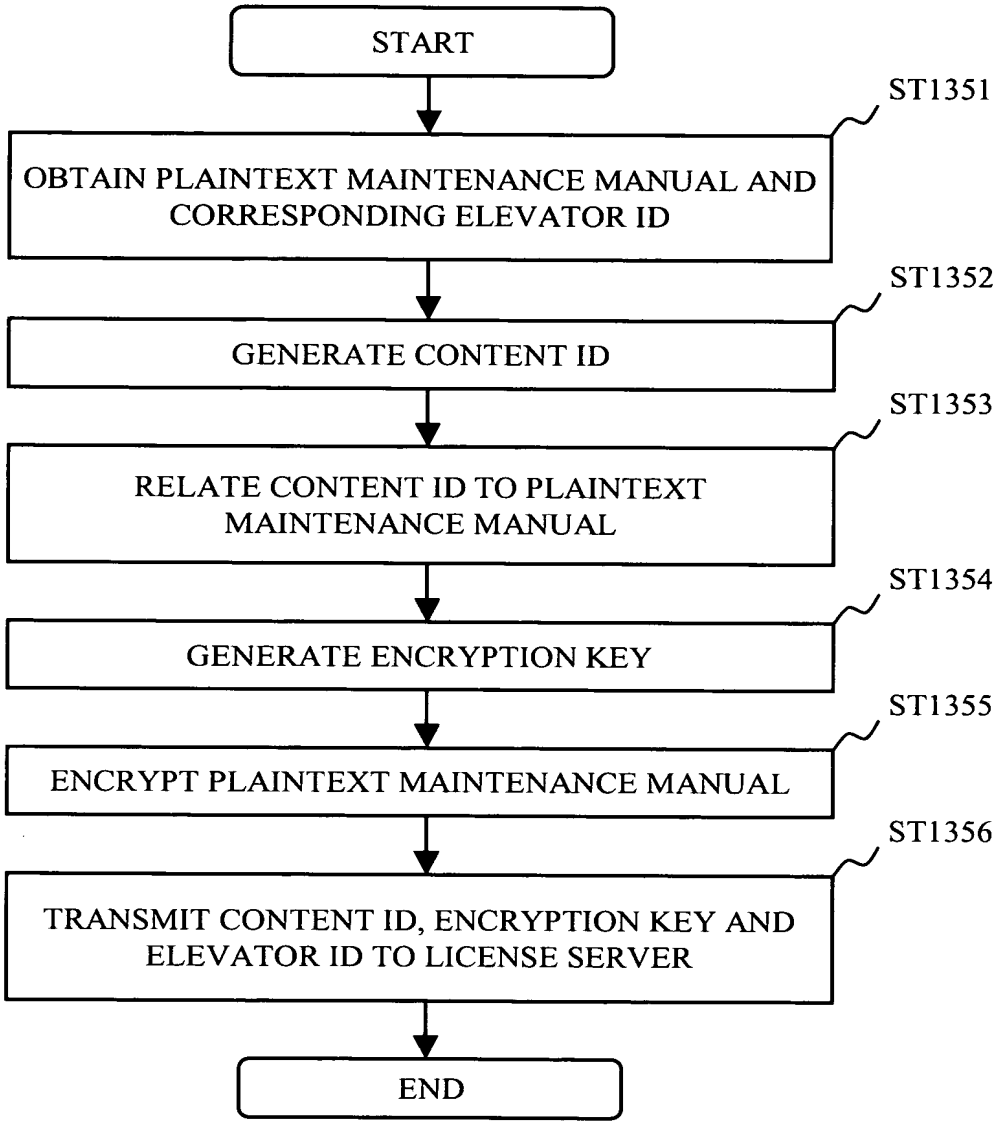

START
ST1351
OBTAIN PLAINTEXT MAINTENANCE MANUAL AND CORRESPONDING ELEVATOR ID
ST1352
GENERATE CONTENT ID
ST1353
RELATE CONTENT ID TO PLAINTEXT MAINTENANCE MANUAL
ST1354
GENERATE ENCRYPTION KEY
ST1355
ENCRYPT PLAINTEXT MAINTENANCE MANUAL
ST1356
TRANSMIT CONTENT ID, ENCRYPTION KEY AND ELEVATOR ID TO LICENSE SERVER
END

Fig. 26

ELEVATOR ID	MAINTENANCE MANUAL ID
5000-888-000054321	1000-222-123450000
5000-888-000054322	1000-222-123450000
5000-888-000054323	1000-222-123450000
5000-888-000054324	1000-222-123450001
5000-888-000054325	1000-222-123450002
5000-888-000054326	1000-222-123450002
:	:

Fig. 27

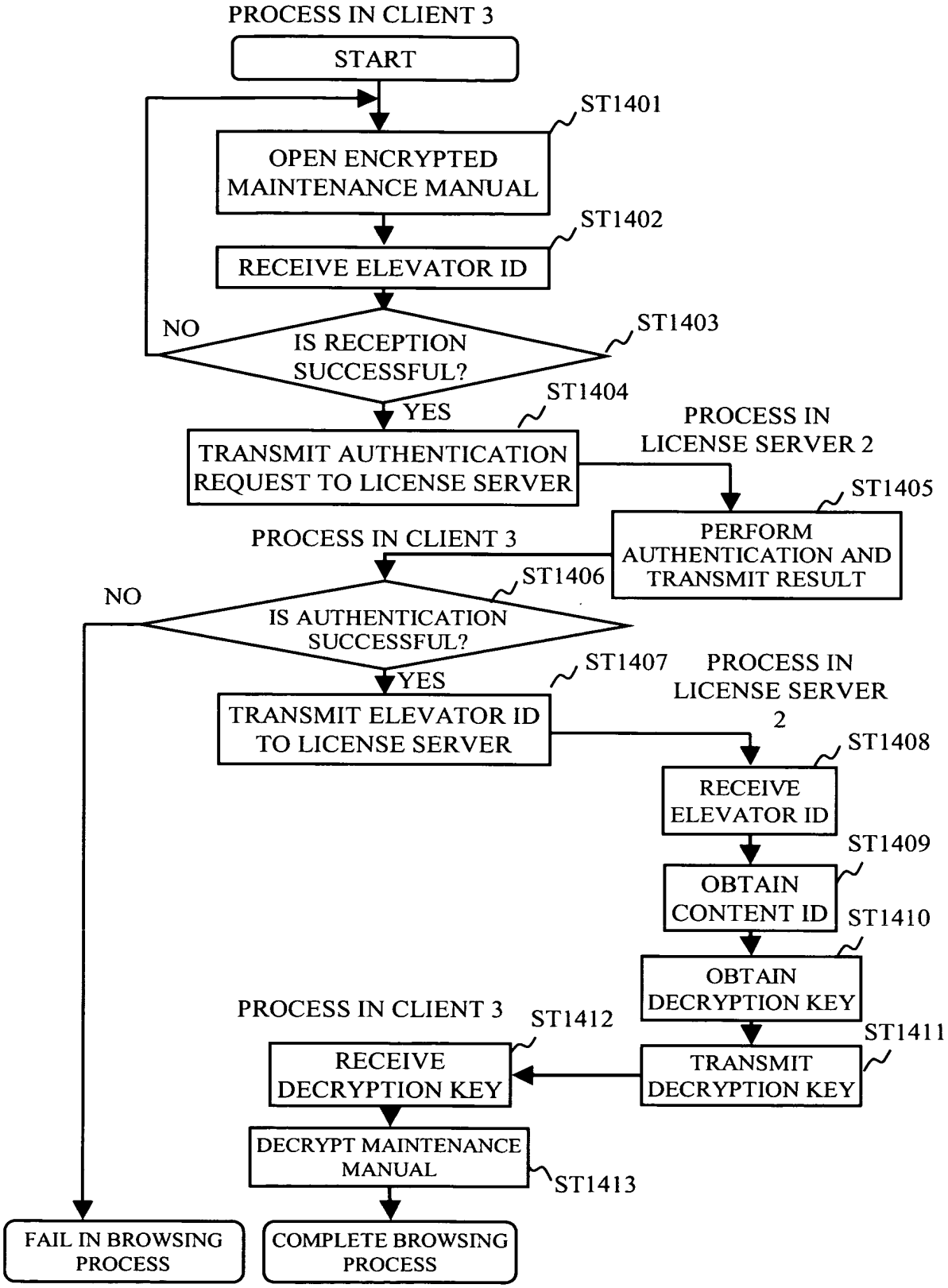
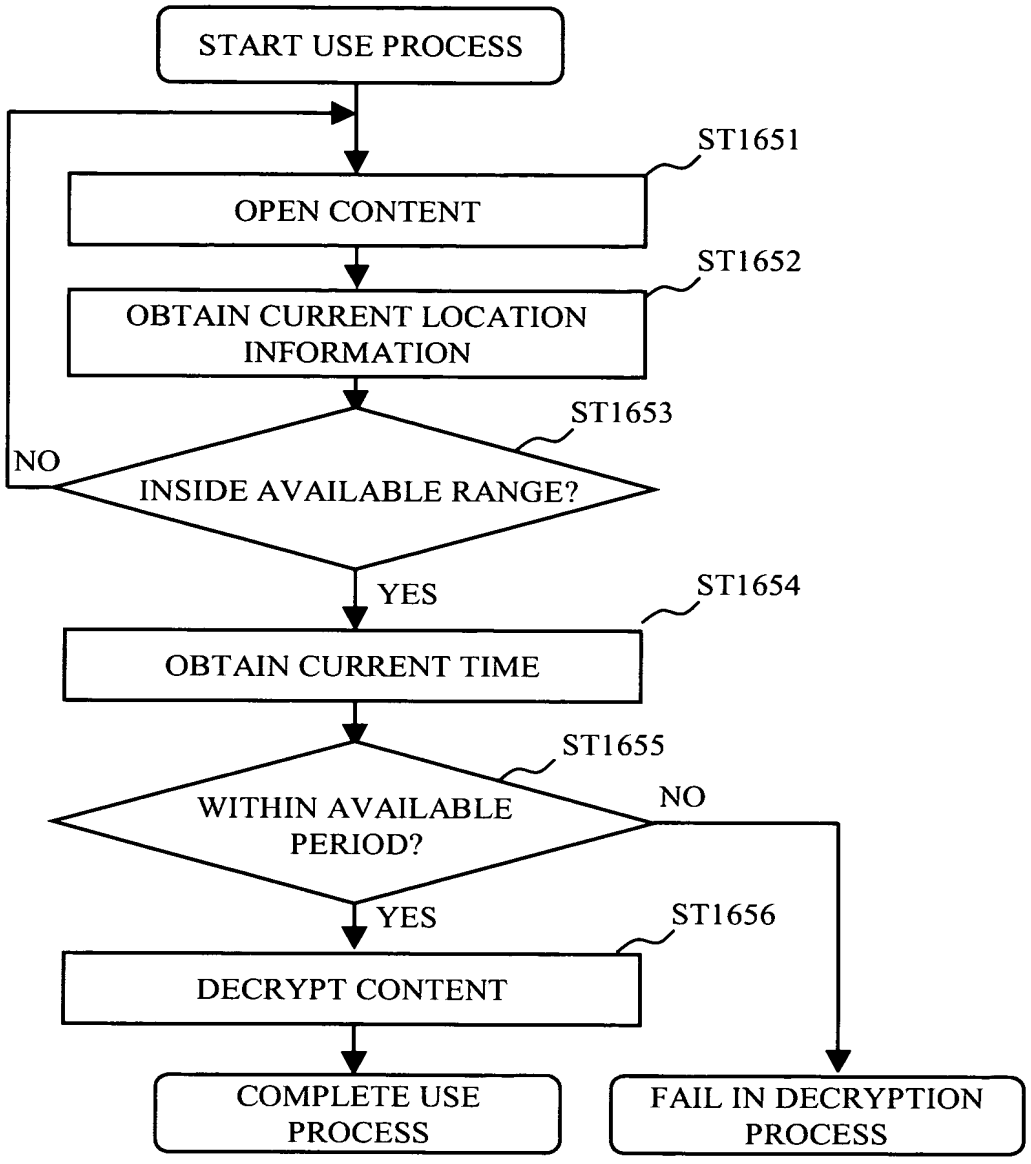

PROCESS IN CLIENT 3
START
ST1401
OPEN ENCRYPTED MAINTENANCE MANUAL
ST1402
RECEIVE ELEVATOR ID
NO
IS RECEPTION SUCCESSFUL?
ST1403
YES
ST1404
TRANSMIT AUTHENTICATION REQUEST TO LICENSE SERVER
PROCESS IN LICENSE SERVER 2
ST1405
PERFORM AUTHENTICATION AND TRANSMIT RESULT
PROCESS IN CLIENT 3
ST1406
NO
IS AUTHENTICATION SUCCESSFUL?
YES
ST1407
TRANSMIT ELEVATOR ID TO LICENSE SERVER
PROCESS IN LICENSE SERVER 2
ST1408
RECEIVE ELEVATOR ID
ST1409
OBTAIN CONTENT ID
ST1410
OBTAIN DECRYPTION KEY
ST1411
TRANSMIT DECRYPTION KEY
PROCESS IN CLIENT 3
ST1412
RECEIVE DECRYPTION KEY
DECRYPT MAINTENANCE MANUAL
ST1413
FAIL IN BROWSING PROCESS
COMPLETE BROWSING PROCESS

Fig. 28


START USE PROCESS
ST1651
OPEN CONTENT
ST1652
OBTAIN CURRENT LOCATION INFORMATION
ST1653
INSIDE AVAILABLE RANGE?
NO
YES
ST1654
OBTAIN CURRENT TIME
ST1655
WITHIN AVAILABLE PERIOD?
NO
YES
ST1656
DECRYPT CONTENT
COMPLETE USE PROCESS
FAIL IN DECRYPTION PROCESS